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# Citizens' Bulletin

Volume 8 Number 8 April 1981 \$3/yr.

The Connecticut Department of Environmental Protection





# Citizens' Bulletin

Volume 8 Number 8

April 1981

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Cover Photo: Leonard Lee Rue III

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Commissioner  
Stanley J. Pac

Director Info & Ed  
William Delaney

Editor  
Margot Callahan

Graphics  
Rosemary Gutbrod

Composition  
Audrey Verrengia

Circulation  
Helen Moriarty - 566-5524

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## Parkes is 1980's wildlife officer

On March 3, 1981, DEP Deputy Commissioner Dennis P. DeCarli presented Conservation Officer Kenneth Parkes with the Shikar Safari Club International Award as Connecticut's Wildlife Officer of the Year for 1980.

Nominees are chosen on the basis of contributing a special effort toward the conservation of the State's wildlife and natural resources, willingness to gain well-rounded knowledge of the wildlife management field, performance of normal assignments, and efforts above and beyond the call of duty.

The award consists of a certificate, a plaque with the club's emblem, and a substantial donation on behalf of the recipient to the National Foundation for Conservation and Environmental Officers, a foundation formed to assist survivors of game enforcement officials. The award is given to line officers who provide outstanding service to their departments in the preservation of wildlife resources.

DeCarli congratulated Parkes on his award saying, "I've been aware of the type of job you have been doing for some time, and I know from the response of clubs and sportsmen with whom you are in contact that you are highly respected and admired in your area. Your

enforcement statistics balanced with good public relations and common sense stand as a model for others to follow."

In recommending Parkes for the Conservation Officer of the Year Award, Law Enforcement Supervisor Donald DeBella wrote, "Officer Parkes is the most aggressive, level-headed wildlife law enforcement officer I have ever seen. I know of many times when he gave up his days off to 'wait out' a deer poacher --never receiving any monetary compensation but getting plenty of satisfaction in knowing that in apprehending a poacher he had in all probability stopped him or at least slowed him down."

Parkes was appointed a Conservation Officer in July 1969 and was assigned to work a patrol area consisting of the towns of Suffield, Windsor Locks, Windsor, East Granby, Granby, Bloomfield, and Canton. In February 1970 he was transferred to the patrol area made up of Durham, North Branford, Guilford, and Madison, where he has served since. He lives in the Town of Guilford.

"The Connecticut Department of Environmental Protection is an equal opportunity agency that provides services, facilities and employment opportunities without regard to race, color, religion, age, sex, physical handicap, national origin, ancestry, marital status or political beliefs."



# A tale of two cottontails...

To most people, one cottontail rabbit looks pretty much like the next. In New England there are, in fact, two distinct species of cottontails, and the more recent arrivals seem to be edging out the earlier settlers.

"As far as we know," says Professor Robert D. McDowell who has been researching New England's cottontail rabbits off and on since 1960, "there are two species of cottontails in New England." According to McDowell, who is Professor of Wildlife Ecology in the Department of Natural Resources and Conservation at the University of Connecticut, the native New England cottontail was first described in 1894 by Outram Bangs — from fourteen specimens taken at the Liberty Hill Rod and Gun Club in Lebanon, Connecticut.

"The New England cottontail," he says, "is evidently a relatively fragile species since it apparently never moved out of this area — ordinarily animals are always trying to expand their range."

"The other cottontail — and we think it's new to New England — was first recognized here in 1929," he says. "The first two 'specimens of record' were taken that year in Sharon, Connecticut."

Various subspecies of this new cottontail, called the Eastern cottontail, were stocked by sportsmen and game departments during the 1800s and 1900s, particularly in areas just south and west of Connecticut's borders. And they seem to be moving north and east.

McDowell and a number of student researchers working with him are "trying to determine which species is where." He and the students, with "gratifying cooperation from all of New England's conservation agencies," have been trapping and identifying cottontails all over New England.

"Recently," he says, "we've personally taken the new species for the first time in New Hampshire — where it's now shown up all along the coast and also up the Connecticut

River to Hinsdale. We have taken it in Vermont — north and south of where it's been reported before. We've found it up the Champlain Valley to the Canadian border — and in the Connecticut River valley up to Brattleboro — areas where earlier only the native New England cottontail was found.

"We haven't yet found it in Maine but we find lots of them in Southern New England — in Massachusetts and Connecticut." In these areas, he says, the native New England cottontail "still pops up." But the newcomers may be edging it out.

McDowell thinks the New England cottontail has not been reduced by factors like hunting. And he points out that the two species cannot interbreed — so the newcomers are not interbreeding New England cottontails out of existence.

"The change," he says, "is just the way nature works. One animal is the stronger. One species can do more on less. The new Eastern cottontail is, for example, more tolerant of numbers. The New England species has never been reported in nearly such numbers within an area."

"We're witnessing," McDowell says, "evolution in the making. Figuratively, there're only so many rabbit holes. So the stronger species gets a foothold and outbreeds the other."

In respect of breeding, cottontails of either species are good competitors. Cottontail rabbits may bear three, and in warmer regions even four, litters of four to seven young each year. The gestation period is about 28 days, and the young leave the nest to fend for themselves after two weeks.

Theoretically, a single pair of cottontail rabbits could, in five years with no casualties to the offspring, produce progeny of over 300,000.

In fact, cottontails are a favorite food of a wide variety of predators — including man, large carnivores, birds of prey, snakes, and, when the rabbits are nestlings, even red squirrels, crows, rats, and shrews.



Leonard Lee Rue III



# Water supplies... wasteful is "all wet"

*From the booklet, "You Can Conserve Water," prepared by Susan White of DEP's Natural Resources Center*

A drought, by definition, is a period of below-normal precipitation which may result in insufficient water supplies. The inability of water supply systems to hold unlimited amounts of water in reserve and increases, over time, in consumption combine to aggravate supply problems when there are deficiencies in rainfall. The interplay of these factors -- precipitation, storage capacity, and consumption -- dictates the severity of any water supply problem. In cases where consumption increases at rates greater than the development of new water supplies, irregularities in precipitation can cause a variety of acute and chronic water shortage problems.

Average annual precipitation figures often represent a combination of above- and below-normal periods of rain. Irregularities in distribution of rainfall over an entire region also occur. These temporal and spatial variations have both short and long-term effects on water supply since streams, reservoirs, and ground water supplies are replenished at varying rates by rainfall.

Amounts of water consumed vary by year, season, and day. Historically, per capita water use has increased in Connecticut. Seasonal variations, related in part to increases in outdoor water use during the summer months, occur throughout

the state. Periods of peak demand are normally during the months of June, July, and August. For some shoreline communities, an increase in summer demand is the result of two important factors: larger summer populations and increases in per capita use. While water use is at a peak, water losses through evapotranspiration and reductions in surface water runoff and groundwater recharge worsen conditions even further.

Ideally, to maintain reserves during periods of low rainfall, water supply systems should be designed to trap adequate quantities of water during periods of normal and above normal precipitation.

For many water utilities, a system of reservoirs serves this retention purpose. For any particular reservoir, the amount of water in reserve is a function of a number of variables; mainly, these are reservoir size (capacity), drainage basin area, surface and ground water runoff within the watershed, and consumption rate. Surface runoff is the primary source of water for reservoirs while ground water, depending on the hydrogeologic characteristics of a basin, may or may not play a significant role. Also important is the size of the drainage basin, since larger drainage basins direct more water into reservoirs.

To maintain water levels, small reservoirs are dependent on uniform rainfall throughout the year. Over even a short period of below normal precipitation, small reservoirs generally drop to less than normal levels regardless of drainage basin size. Large

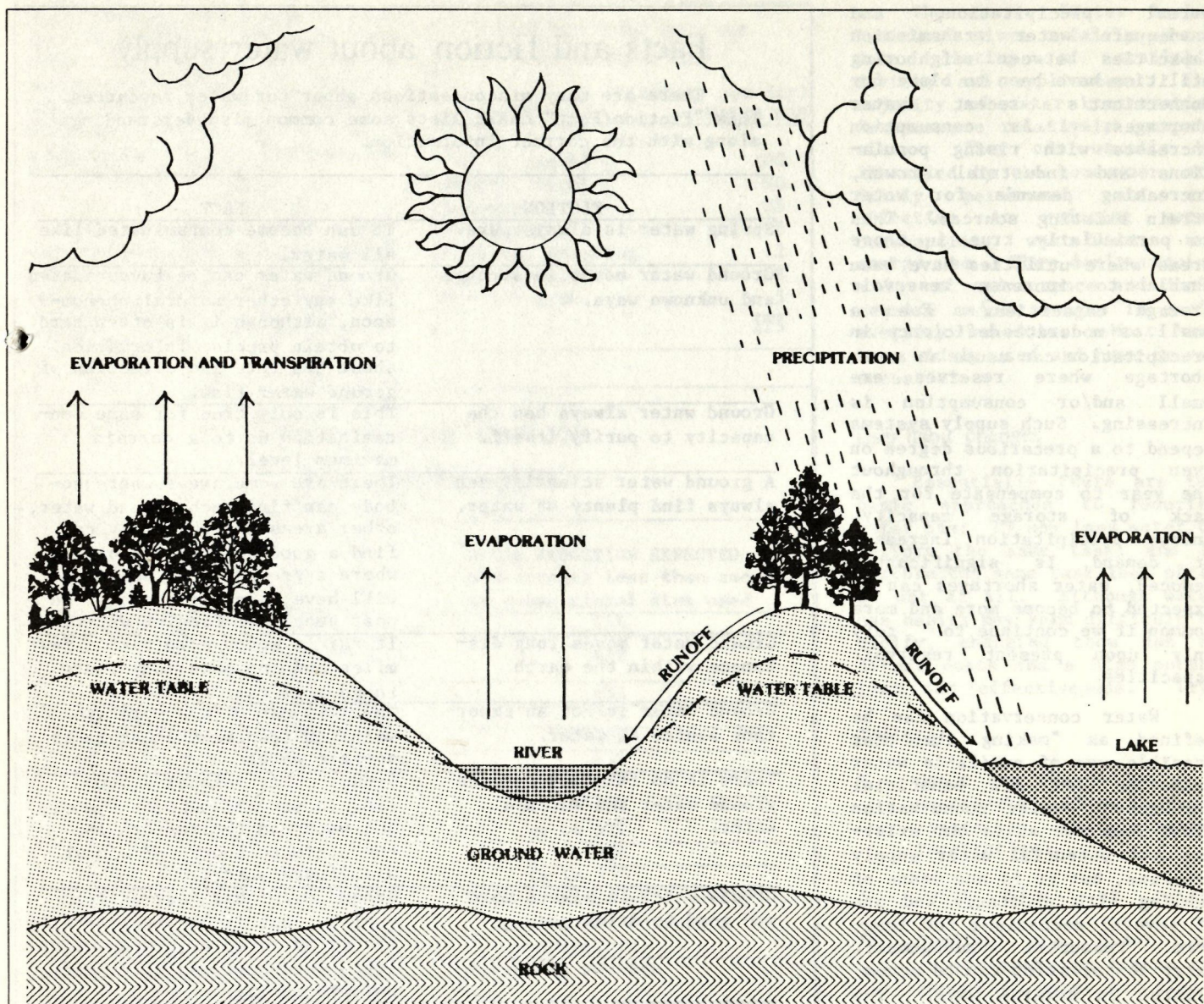
reservoirs, on the other hand, are less susceptible to periodically deficient rainfall. The larger drainage basins generally associated with them direct more surface water to these reservoirs, and due to their storage capacity most of this water can be held in reserve. Once a small reservoir fills to capacity, however, a significant quantity of water may be untrapped as it flows over the spillway during periods of normal or above normal precipitation. This is particularly true of small impoundments located in large drainage basins.

New England has the reputation of being one of the most water-abundant regions in the United States. When we hear of a drought or a water shortage, we generally think of the Midwestern and Western United States. Because we have fairly regular precipitation -- approximately 40 inches a year -- we assume that we have an abundance of fresh water at our disposal and that it is constantly being renewed.

However, studies in recent years have revealed that the contrary is true. An uneven distribution of water resources and population concentrations, increasing numbers of contaminated water supplies, and lack of precipitation all contribute to growing deficits of potable water. It has been estimated that more than 200 cities and towns in New England will suffer severe shortages of clean water by 1990 unless something is done.

High water use coupled with insufficient water storage capacities, short-term below-





## How water works: the hydrologic cycle

If we're to implement conservation measures it helps to understand where our water comes from and how we can best conserve and protect it.

The natural cycle through which water circulates is referred to as the hydrologic cycle. This cycle is a very complex system, but for general purposes it can be explained in rather simple terms. (See the diagram.)

Most precipitation, in the form of rain, snow, sleet, or hail, is associated with low pressure centers passing over an area. As precipitation occurs, some of the water is vaporized and immediately returns to the atmosphere; some flows into lakes, ponds, marshes, streams, swamps, and oceans as surface runoff; and some infiltrates or percolates into the soil. Eventually, most of the percolated water finds its way to underground aquifers where it becomes available for use as ground water. Meanwhile evaporation continues as water from surface water bodies and the soil returns to the atmosphere. Transpiration, the evaporative loss of water from plants, returns additional water to the atmosphere.

The quality of the water moving through the hydrologic cycle is constantly changing. A number of chemical, physical, and biological processes take place throughout the cycle. Precipitation picks up particles and gases from the atmosphere, for example, and water is modified by reactions with soils, rocks, and organic matter on the ground.



normal precipitation, and inadequate water transmission capacities between neighboring utilities have been to blame for Connecticut's recent water shortages. As consumption increases with rising populations and industrial growth, increasing demands for water strain existing sources. This is particularly true in those areas where utilities have been unable to increase reservoir storage capacities. Even a small or moderate deficiency in precipitation can cause an acute shortage where reserves are small and/or consumption is increasing. Such supply systems depend to a precarious degree on even precipitation throughout the year to compensate for the lack of storage capacity. Unless precipitation increases or demand is significantly reduced, water shortages can be expected to become more and more common if we continue to rely only upon present reservoir capacities.

Water conservation can be defined as "making the best possible use of available water resources for all beneficial purposes." Water conservation alone does not solve our existing and potential water supply problems, but it is one means of dealing with shortages and one of several mechanisms for long-term resources management. Water conservation can be accomplished in several ways. The first of these is changing the circumstances -- repairing equipment to prevent waste or altering plumbing or appliances or adjusting landscaping to use less water (the easiest way, all around). The second way is by changing our habits to waste less (usually the cheapest approach).

Since conservation is something that you, the user, must do, we offer some methods of going about it, via small alterations in equipment and the elimination of water-wasteful habits. Try them. Wasting water is "all wet."

#### Water saving devices & appliances

The object of water saving devices is to reduce flows from

## Facts and fiction about water supply

There are many misconceptions about our water resources. This "Fiction/Fact" chart lists some common misunderstandings along with the correct information.

FICTION	FACT
Spring water is always pure.	It can become contaminated like all water.
Ground water moves in strange and unknown ways.	Ground water can be investigated like any other natural phenomenon, although it is often hard to obtain precise information about the rate and direction of ground water flow.
Ground water always has the capacity to purify itself.	This is only true for some contamination up to a certain maximum level.
A ground water scientist can always find plenty of water.	There are some areas where nobody can find much ground water, other areas where anybody can find a good supply, and others where a ground water scientist will have a better chance than most people of finding water.
Ground water moves long distances within the earth	It rarely moves more than a few miles and can take many years to go this far.
Ground water is not an important source of water.	There is many times more ground water in reserve than there is surface water.
There is no relation between ground water and surface water.	Ground water maintains the flow in streams between rains, and water on the surface is the ultimate source of almost all ground water.
Ground water is always safe and good to drink.	Ground water has very uniform quality, but it can be naturally bad or degraded by human activity. Once degraded it is very hard to purify.
Ground water sources are inexhaustible.	Demand can exceed supply, water levels will drop, and wells will go dry.
Surface activities and land uses have no effect on ground water supply or quantity.	Since ground water originates on the surface, any surface activity can change the quality or quantity of water entering the ground.

From "A Practical Handbook For Individual Water-Supply Systems in West Virginia." By Ronald A. Landers, West Virginia Geological & Economic Survey.

showers, sinks, and toilets to the minimum necessary for accomplishing their purposes. This can be done either by adding flow reducing devices to existing fixtures or by replacing these with new fixtures

designed to reduce flows. Domestic water use can also be decreased by reducing service pressures with the use of pressure regulating devices and by replacing automatic dishwashers and clothes washers with water conserving models.



Domestic water use is the largest single use of water from public supplies on a statewide basis and therefore is a logical target for water conservation measures. The use of devices is aimed primarily at reducing this household consumption.

The following table shows the average amount of water (225 gallons) a family of four would use in one day. It identifies which activities constitute this total water use.

Average daily water use for family of four	
ACTIVITY	(gallons per day) WATER USE
Toilet flushing	100
Shower, bathing	80
Laundry	35
Dishwashing	15
Cooking, drinking	12
Bathroom sink	8
Utility sink	5
	<u>225</u>

The chart, "Water Saving Devices," gives a fairly up-to-date listing of available devices and appliances. The majority of water conservation devices are relatively inexpensive. They can usually be installed by the homeowner, are fairly permanent, and are effective in reducing water consumption, wasteflows, and energy use. They don't require a lot of maintenance and don't require major changes in one's everyday schedule. Most have been widely used and have proven successful.

## Water saving devices and appliances

DEVICE	WATER REDUCTION EXPECTED percentages less than amount if conventional item used
Shallow trap toilet	15%
Fresh water recirculation (self contained)	98%
Wastewater recycling toilet	45%
Pressurized flush toilet	90%
Pressurized tank toilet	50-60%
Vacuum flush toilet	45%
Variable flush	50%
Dual flush	10-20%
Toilet tank inserts	Up to 30%
Aerators, spray taps	50%
Faucet flow restrictors	Up to 75%
Thermostatically controlled mixing valves	Reduces waste water while waiting for correct temperature
Pressure balancing mixing valves	Potential savings
Shower heads	Water reductions vary according to type
Functionally designed sinks/tubs	Potential savings
Bottled water	Users generally do not waste
Chilled water dispensers	Saves time by eliminating running water
Instant hot water	Eliminates waste while waiting for hot water
Automatic dishwasher	Can save if properly used
Automatic clothes wash with suds saver	20-26%
Time controlled sprinklers	Dependent on system
Hose attachments	Dependent on user
Swimming pool covers	Cuts losses from evaporation
Pressure reducing valves	30-36%
Drip irrigation	Dependent on user
Instantaneous lawn moisture indicators	Dependent on user

From "Before The Well Runs Dry"; Water Conservation Project, New England River Basins Commission, Boston.

### User habit changes

Essentially there are two basic approaches to reducing water use: 1) use less water to perform the same task, and 2) perform the same task less often or not at all. Although water use habits may seem difficult to modify, changing them has no direct costs and a high potential for effectiveness. Try:

#### Toilets

- \* Don't use the toilet as a wastebasket (throw tissues, cigarettes, etc., in proper receptacles).
- \* Don't flush as often.
- \* Bending the float arm in the tank can lessen the amount of water per flush.
- \* Check that water valve closes in tank after toilet is flushed.

#### Bathing

- \* Plug tub right away when filling for bath (temperature can be regulated).
- \* Fill tub one-quarter full for bathing.
- \* When taking a shower, turn water off while soaping up or reduce amount of flow.
- \* Don't leave water running while brushing teeth or washing up at sink.
- \* Fill the sink rather than running water for shaving.





*Wash dishes after you've accumulated a sink full. Pour boiling water over drainer rather than rinsing under running water.*

- \* Make sure faucets are turned off tightly after use.

#### Drinking and Cooking

- \* Keep bottle of cold water in refrigerator instead of

letting water run to get a cool drink.

- \* Put water on the table for meals only if people want it.

- \* Thaw foods ahead of time or in a pan of water

instead of quick thawing under running hot water.

- \* Wash vegetables in sink or pan, then use water for plants and/or garden.
- \* Use a minimum of water when cooking vegetables, and keep pans covered to reduce loss of steam. (Often remaining water can be used as soup stock -- very high in vitamins.)
- \* Use garbage disposal only for necessary items, and use cold water.
- \* Remove ice cube trays a few minutes before you plan to use them to avoid running them under water to loosen them.

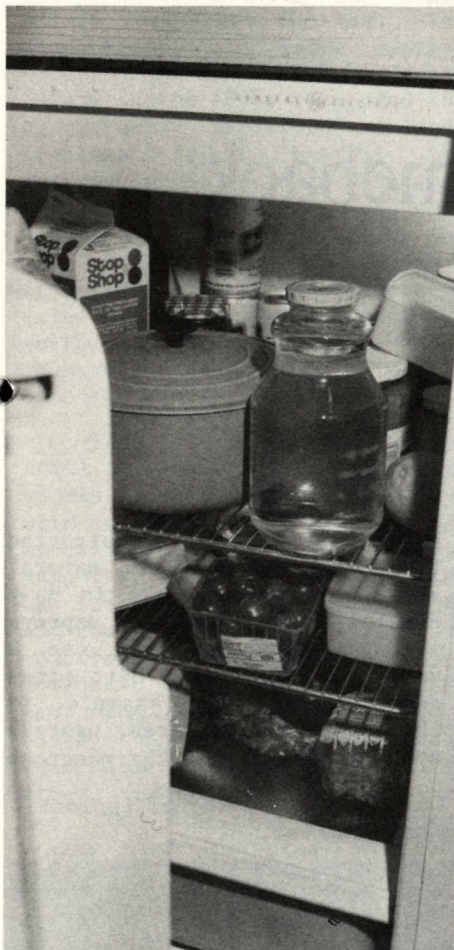
#### Clothes Washing

- \* Run machine only when there's a full load.
- \* Use variable load control if there is one on your machine.
- \* Use suds saver on machine if there is one (or consider buying a machine

### Comparison of water use before and after user habit changes

<u>Item</u>	<u>Normal Use</u>	<u>Gallons</u>	<u>Conservation Use</u>	<u>Gallons</u>
Shower	Water running	25	Wet down, soap up, rinse	9
Brushing teeth	Tap running	10	Wet brush, rinse briefly	1/2
Tub bath	Full	35	One-quarter full	10-12
Shaving	Tap running	20	Fill sink	1
Dishwashing	Tap running	30	Wash & rinse in filled sink or dishpan	5
Automatic dishwashing	Full cycle	16	Short cycle	7
Washing hands	Water running	2	Fill sink (or run just to wet & rinse)	1
Toilet flushing	Average	5-7	With tank displacement	3-6
Washing machine	Full cycle, top water level	60	Short cycle, minimum water	27
Outdoor watering	Per minute	10	Minimize	





*Chill drinking water in refrigerator.*

*Run washer only when you have a full load.*



with suds saver when purchasing one).

- \* Accumulate laundry for hand washing instead of doing items one by one.

#### Dishwashing

- \* Run dishwasher only when it's full.
- \* If dishes have to be rinsed before going into dishwasher do it in filled sink or dishpan of water.
- \* When hand washing, rinse by pouring hot water over dishes in drainer rather than rinsing under running faucet.

#### Equipment repair

A significant amount of water is constantly being lost due to lack of upkeep of water fixtures and appliances. To minimize water loss, check for leaks from all water outlets, especially hot water faucets where heating costs go down the drain along with the water. The toilet can be checked for leaks by placing a couple of drops of food coloring in the toilet tank. If the coloring shows up in the toilet bowl then there's a leak in your system which needs repair. Most leaks are caused by worn washers. If a periodic check reveals dripping faucets, try taking them apart and replacing the washer.

#### Water Wasted From Leaks

(Based on water pressure of 40 pounds per square inch.)

1/32nd inch leak over 24 hours  
170 GALLONS WASTED.

1/16th inch leak over 24 hours  
960 GALLONS WASTED.

1/8th inch leak over 24 hours  
3,600 GALLONS WASTED.

#### Outdoor conservation & selective landscape design

Using a bucket of water and a spray nozzle on the hose instead of running water while washing the car, checking

outdoor faucets to make sure they are shut off tightly and that there are no leaks, covering swimming pools to avoid excessive evaporation, and sweeping walks and driveways rather than hosing them down are all effective means of implementing water conservation. Some other suggestions for lawn and garden conservation include:

- \* Raise blade on lawn mower to cut grass one-and-one-half inches high to provide shade for roots and help reduce water loss.
- \* Know what kind of soil you have and how deep it is. This knowledge will help you determine how long you should water and how often.
- \* Water lawn in early morning or early evening to avoid losses due to evaporation.
- \* Don't overwater. Give the water time to sink into the ground. Home gardeners often waste a lot of water by allowing runoff to streets and gutters. If water has a chance to be absorbed, deeper roots develop, decreasing the need for water as well as increasing a lawn's resistance to disease and wear.
- \* Pull weeds for they compete with grass and garden plants for the water that is available.
- \* Try selective landscape design. Use plants that are native to the area and drought resistant or tolerate dry soils. Consultation with your local nursery or cooperative extension service can provide you with specific information.
- \* A layer of mulch around plants, trees, and shrubs can keep the soil cool, reduce moisture loss through evaporation, aid air and moisture penetration of the soil. ■



# Ospreys continue their comeback from unusual nest sites

By Greg Chasko, DEP Wildlife Research Assistant

Summary of Connecticut Osprey Breeding Activity Since 1969

Year	Active Nests	Successful Nests	Total Young Fledged	Average Number of Young Fledged/ Active Nest
1969	16	7	10	0.63
1970	13	5	8	0.62
1971	12	3	8	0.67
1972	10	4	9	0.90
1973	10	3	4	0.40
1974	9	4	7	0.78
1975	10	5	10	1.00
1976	10	7	14	1.40
1977	10	9	20	2.00
1978	14	8	15	1.07
1979	15	14	25	1.67
1980	19	15	26	1.37

Audubon described it as "graceful and majestic as an eagle." Few who have observed an osprey remain unimpressed by this magnificent bird. A large brown and white, fish-eating hawk with a wingspan of up to six feet, the osprey often can be seen circling high above coastal waters. Sometimes this circling flight is interrupted. The osprey spots its prey, hovers momentarily, folds its wings, and plummets downward, entering the water feet first in a cloud of spray. When the dive is successful, the bird will rise from the water with a fish clutched in its talons, shake the water off its feathers, and fly back to its nest or perch.

Not long ago this scenario was a rarity along the Connecticut coast. In the late 1960s the osprey seemed doomed in Connecticut. The demise of this great bird was due to reproductive failure caused by pesti-

cides such as DDT and dieldrin. However, these chemicals were banned in Connecticut in 1970, and osprey numbers began to recover in the mid-1970s.

If 1980 is a portent of things to follow in the decade, the future looks promising for Connecticut ospreys. During the summer of 1980, DEP personnel observed 20 nests along the coast. Nineteen nests were active, fledging 26 young and continuing a string of successful nesting seasons in recent years. It has been estimated that an average of 0.95 to 1.30 young fledged per active nest is needed to maintain a stable population. Every year since 1975 Connecticut's ospreys have averaged at least 1.00 young fledged per active nest, and the number of active nests has steadily increased.

Historically, typical osprey nests in Connecticut were

built in large unobstructed trees near water. Such natural sites have become rare in many coastal areas. However, ospreys are adaptable and can use a variety of different nest sites successfully. For example, in the Chesapeake Bay area, ospreys nest extensively on the numerous

Adult and two young at typical platform nest.



Greg Chasko photos



navigational markers and duck blinds throughout the bay. In Connecticut, the large osprey colony that flourished on Great Island in the 1940s responded to a virtually predator-free and treeless island habitat by nesting on the ground. Near the turn of the century, it was not uncommon to find osprey nests on old windmill towers, chimneys, or utility poles. People interested in having ospreys nesting nearby used to place cart wheels atop poles to provide suitable nest sites.

Today, utility poles are still commonly used, but cart wheels have been replaced by wire and wood platforms designed specifically for osprey nest supports. The Connecticut DEP has located many platforms along the coast in suitable areas. In addition, cooperation between Northeast Utilities and the DEP has resulted in saving several osprey nests. Where nests interfered with electrical wires, frequently shorting them out, nest platforms were placed nearby and accepted by the birds.

The osprey's adaptability is vividly demonstrated by some unusual nest sites used in Connecticut. For example, train passengers traveling along the main Amtrak line from Boston to New York may catch a glimpse of a nest built on a utility pole a few yards from the tracks near Stonington Harbor. Observant airplane passengers at the Groton-New London airport can get a real "birds-eye" view of an osprey nest located on a platform next to the runways. Motorists traveling along Interstate 95 near the Groton Reservoir can observe a platform nest within 100 meters of this major highway. At the Millstone nuclear power plant in Waterford there are two platform nests. Birds nesting here apparently pay no heed to the traffic and construction activity. But the most amazing nest in Connecticut has to be the one located in the parking lot of Ocean Beach amusement park in New London. Here, high atop a 27 meter light tower, a pair of ospreys have nested successfully since 1978. These birds tolerate the daily and nightly traffic and carry

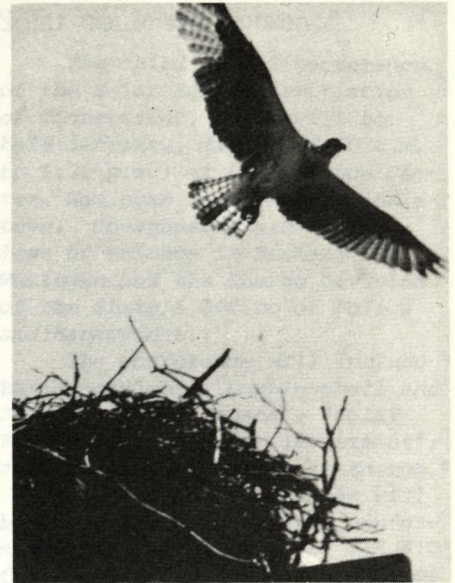
out the serious business of rearing their young in the carnival-like atmosphere of the amusement park.

Regardless of where they're built, osprey nests are elaborate. Bulky structures made primarily of sticks, the nests are used year after year by ospreys that add new sticks each season. Observers have reported instances where tree nests have gotten so big that they fell from their own weight or collapsed the tree.

In late March, ospreys return from their wintering grounds in South America and nest building begins. Ospreys sometimes collect sticks for their nests by diving and smashing dead limbs off trees with their feet, and then catching the falling stick in mid-air. In addition to sticks, ospreys carry some interesting miscellaneous to their nests including seaweed, parts of life preservers, pieces of fish net, rope, shells, strings of conch eggs, old shoes, wings from dead birds, and even cans and bottles.

After nest building is completed, the next important event is egg laying. In late April, the eggs (usually three) are laid and incubated, mostly by the female, for the next 28 days. In late May and early June most of the young hatch. The nestling ospreys start stretching their wings after six or seven weeks in the nest and make their first uncertain flight after about eight weeks. After the young are flying, the nest is still used as a home base for feeding and resting. By the end of August, nesting activity ends in Connecticut. Migration begins in late August and peaks in late September. A few birds can be seen as late as the end of November. Thus, ospreys can usually be seen in Connecticut from approximately late March to late September.

These impressive birds are readily observable and among the most exciting wildlife to watch in Connecticut. They have survived the losses incurred during the DDT-era and have



*Osprey circles above nest.*

adapted to nesting in close proximity to man along an increasingly developed coastline. Nest platforms made available to ospreys in recent years have contributed to the increasing number of nests along the coast. While a return to pre-DDT abundance is unlikely, the success of nesting pairs in recent years is encouraging, and we view the future of ospreys in Connecticut with cautious optimism. ■

*Osprey nest atop light tower at Ocean Beach Park.*





# Canoe and camp on the Connecticut

By Diane Harrington,  
Student Intern, Central Connecticut State College

Canoeists can now enjoy overnight camping on their trips down the Connecticut River. New canoe camping areas, managed by the Department of Environmental Protection, will open May 1 at three State parks along the river.

The new camps at Hurd, Gillette Castle, and Selden Neck State Parks will be open through September 30. The DEP permitted camping last year on a trial basis. Because of the popularity and apparent public demand, this summer the department is implementing canoe camping as a regular program of the Office of Parks and Recreation. The sites have been set up for small boats such as canoes and kayaks.

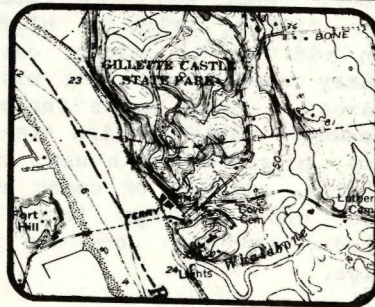
Hurd State Park, the northernmost of the three areas, is located in East Hampton on the east bank of the Connecticut River and will accommodate 50 campers. The sites are situated in the flood plain of the river, beneath the steep granite ledges of the park's extensive upland acreage. A hike to Split Rock will provide one of the best panoramic views of the lower Connecticut Valley.

The Gillette Castle camp area is located in East Haddam, immediately north of the Hadlyme ferry landing, and has a capacity of 20 persons. The renowned castle, home of actor William Gillette, is within a short walk of river's edge.

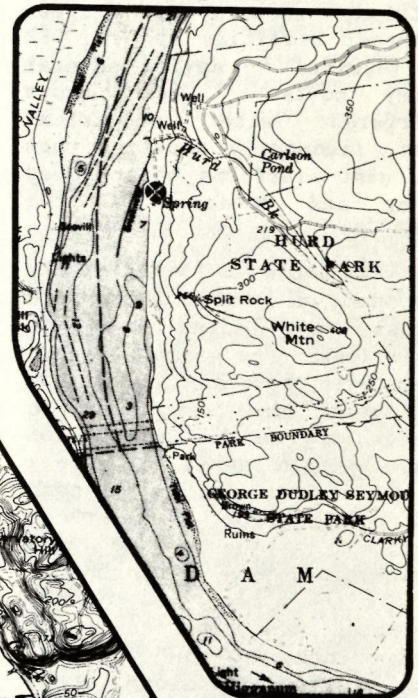
Selden Neck, which is slightly misleading in its name, is in reality an island of 528 acres. In the last century it was an extension of the mainland and contained a thriving agricultural, mining, and fishing community before the

"neck" was breached. Today, stone walls and the abandoned quarries that once produced paving block for New York and New Orleans remain as reminders of that earlier day. There are four separate camp areas at Selden Neck, with a total capacity of 46 persons.

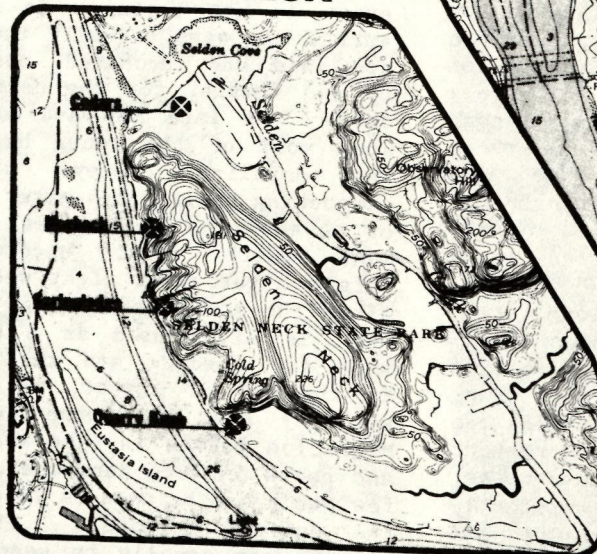
GILLETTE CASTLE



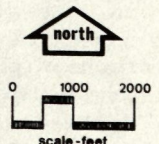
HURD



SELDEN NECK



✕ CAMP AREA LOCATIONS







Campsites at all three parks offer primitive riverside sites equipped with fireplaces, pit toilets, water supplies, and tent ground sites. Stays at these sites are limited to one night, and the fee is \$1 per person for the night. Reservations must be made in advance by sending a letter including information on camp area, date, name and address of group leader, number and ages of persons camping, type of boat, and intended launch and take-out points along with required fee to Gillette Castle State Park (River Road, East Haddam, CT 06423). You may call the park at 526-2336 for information

on campsite availability. Brochures containing complete information on the new program and campsite descriptions are available at the Information and Education Unit and the Parks and Recreation Unit of the DEP, at four Regional Offices, and at Gillette Castle.

For those who would like to try canoe camping but lack the canoe or equipment, a new concession is being set up at Gillette Castle. The "U-Paddle Service" will offer complete outfitting for canoeists, including canoes, paddles, life jackets, and even transportation to other launching sites if desired. ■

## Solar conference planned

The third annual conference of the Solar Energy Association of Connecticut, Inc., will be held Saturday, May 16 (8:30 a.m. to 5:30 p.m.) at the Science Center, Wesleyan University, Middletown. Co-sponsors are the College of Science in Society at Wesleyan and the Energy Division of the State's Office of Policy and Management.

The conference will include three sessions: "Double-shell and Superinsulated Houses"; "Solar Businesses and Solar Investment"; and "Connecticut Women in Energy."

Numbers of registrants will be limited. Fees for the conference are: general public, \$15 (\$12 for pre-registration before April 20); full-time students, \$7.50; members of the association, Wesleyan University, or the State Energy Division, \$10; student members of co-sponsoring organizations, \$5.

For information, write Solar Energy Association of Connecticut, P.O. Box 541, Hartford, CT 06101; or call K. Raman at (203) 233-5684 (evenings) or Mark Jeske (203) 566-7882 (days). ■

## Turkey calling seminar

The Connecticut Chapter of the National Wild Turkey Federation (NWTf), in cooperation with the Department of Environmental Protection, will present a "Wild Turkey Calling Seminar" at 2 p.m. Sunday, April 26. It will be held at the Bristol Fish and Game Association, Willis Street, Bristol.

Rob Keck, a nationally known turkey calling champion from the National Wild Turkey Federation, will present a program dealing with the art of turkey calling, turkey hunting know-how, hunter ethics, and the NWTf. Steve Jackson, wild turkey project leader for the DEP, will present slides on turkey restoration in Connecticut and up-to-date information on the turkey populations in the State.

Members of the public interested in the finer points of turkey hunting are invited. A donation will be requested at the door to cover costs and help support some programs of the Connecticut Chapter of the NWTf. ■



# A fall overboard into cold water poses special survival problems

By Frank Glista, DEP Hunting and Boating Safety Representative

Over many years, U.S. Coast Guard records have shown that although the vast majority of boating activity occurs during summer months, over 60 percent of the fatalities occur during the so-called slow season.

Fishermen and duck hunters, the first and last boaters of the year, utilizing small craft in pursuing their hobbies, should realize that small boats tend to be tippy and unstable. Capsizings, sinkings, and falls overboard account for 70 percent of boating fatalities and are directly related to this lack of stability. For this reason users of small boats in waters below 50°F have a special concern -- hypothermia.

A fall overboard in summer may result in an embarrassing and unintended swim, but the same experience in cold water can result in a drowning.

## Sudden disappearance syndrome

Drowning in cold water can take two forms. One of these is known as "sudden disappearance syndrome." A sudden plunge into cold water can cause, in some individuals, rapid uncontrollable breathing, heart stoppage, and other problems. Witnesses have reported that the victims simply fell into the water, went under, and were not seen alive again. There is only one defense against this condition, wearing a PFD (personal flotation device). Many manufacturers include in their line of products a device known as a

float coat. These units are ideally suited for the sportsman for they provide flotation and also warmth. They are very neat in appearance and are comfortable and practical as an outer garment with pockets for sporting supplies. The only device that is better for cold water use is a survival suit such as those used by commercial fishermen.



## Acute hypothermia and cold water drowning

A victim of a cold water plunge is confronted with the need to make several difficult and critical decisions. He or she must not panic. Most overturned boats will float; boats under 20 feet in length which were built after 1978 will float in an upright position even when swamped and will support the carrying capacity of the craft. Get in or on the boat and keep as much of the body out of the water as possible. If you cannot get into the boat, a PFD will keep your head out of the water which is espe-

cially important since the head is a high heat loss area. Do not attempt to swim to shore unless it is near or no other hope of rescue is possible. Strong swimmers in good condition may be able to swim only one-half mile in 40 to 50 degree water while others succumb to hypothermia in as little as 100 yards or after as little as 15 minutes.

## What is hypothermia?

Hypothermia is the cooling of the body's core (vital organ area) at a rate faster than the body can produce heat.

If you have ever shivered uncontrollably on a cold winter day you were probably in the first phase of what is known as slow onset hypothermia. The shivering is the body's attempt to produce heat through motion or exercise. Slow onset hypothermia can occur in as little as 90 minutes but more often occurs over a much longer period of several hours. It is caused by sustained exertion in combination with wet or insufficient clothing and inadequate food and liquid intake. This type of hypothermia generally victimizes hikers, skiers, and outdoorsmen who get lost or are unprepared for cold, wet weather.

The treatment and recovery from slow onset hypothermia requires medical supervision and specialized medical apparatus to deal with physiological changes in body function and body fluids, however First Aid rescue techniques must be continued until such facilities are available.

## Acute hypothermia

Plunging a body into cold water is a great shock to the system. Water, being a good conductor, draws away body heat faster than the system can produce it. As the body core temperature drops, its ability to produce heat is further impaired, hastening the cooling process. To protect the vital organs, the blood supply to the extremities (arms and legs) is involuntarily shut off or dimin-



ished, resulting in loss of muscle function. An individual in this condition cannot don a life preserver, hold onto a boat, or swim. Continued immersion, reducing the core temperature to 90°F, results in unconsciousness, and death occurs at around 80°F. Heat loss varies with individuals: men lose heat faster than women, slender individuals faster than stout people, and children faster than adults. Survival in cold water also depends on other factors, and swimming or treading water results in a 30 to 40 percent faster rate of heat loss as this action exposes the head, neck, sides and groin which are the areas of greatest heat loss.

A technique known as drown-proofing, which is very useful in warm water, can accelerate body heat loss by 75 to 80 percent and cuts survival time in cold water in half because of the head's being submerged repeatedly.

Wearing a PFD under cold water conditions is a must. A properly fitted PFD will keep the head above water and keep a person afloat even if he's unconscious.

#### First aid for hypothermia victim

As with any other victim of drowning, the first act of any rescuer should be to check pulse and respiration. Victims of cold water drowning have been revived after as much as one hour of submersion, with the greatest success on younger people. If vital signs are absent proceed with (CPR) cardio-pulmonary resuscitation (clear airway: one lung inflation to five chest compressions at a rate of 50-60 compressions per minute). Get help if possible.

Once the victim is breathing, remove all of the victim's wet clothing to prevent further heat loss. Rewarming should concentrate on trunk and head, so cover body and head with blanket, leaving arms and legs exposed, while applying warm water bottles to the neck, body, sides, and groin area. Do

not cover without providing some external heat. Body to body contact is a good emergency procedure. Get medical assistance or remove patient to a medical facility if victim is conscious and can be moved. Do not give victim liquids. No alcohol.

Most important, do not give up!

Hypothermia victims have been revived even after all life signs were absent.

#### How to avoid hypothermia

Sportsmen boating on cold waters should wear a PFD and avoid actions that could cause them to end up in the water. Therefore:

- \* Do not stand up in a small boat

- \* Do not move around or change positions
- \* Do not overload boat or cause imbalance by loading improperly
- \* Check weather conditions, and stay ashore if waters are rough
- \* Do not make high speed turns or decelerate abruptly, causing boat to overturn or become swamped by wake over the transom
- \* Be sure to advise someone of when and where you plan to boat

For more information write: Department of Environmental Protection, Information and Education Unit, 165 Capitol Avenue, Hartford, CT 06115. ■

### Kensington becomes salmon hatchery

Dennis DeCarli, DEP's Deputy Commissioner for Conservation & Preservation, announced that the Kensington State Fish Hatchery has been redesignated the Kensington State Atlantic Salmon Hatchery. Conversion from a domestic trout production facility to an Atlantic salmon research and production facility has already begun.

"The removal of this hatchery from the production of domestic trout," DeCarli said, "will have no impact on the number of trout stocked annually in Connecticut streams by DEP." Changes within the State's hatchery system will allow for the production of the usual numbers of trout at the Burlington State Fish Hatchery and the Quinebaug Valley Hatchery in Plainfield. The 95,000 to 100,000 fish previously reared at Kensington will be raised at the other two hatcheries. The total production of trout in Connecticut was stabilised in 1980 at approximately 800,000 fish.

"The designation of Kensington as a salmon research

and production facility," said Robert A. Jones, chief of DEP's Fisheries Unit, "will allow Connecticut to become a more equitable partner in the Connecticut River Atlantic Salmon Restoration Program. This project is a cooperative program among the states of Connecticut, Massachusetts, New Hampshire and Vermont, and the U.S. Fish and Wildlife Service."

Fourteen Atlantic salmon of the 174 that returned to the Connecticut River in 1980 were held temporarily at Connecticut's Quinebaug Hatchery where 67,500 eggs were artificially spawned this past fall. The resulting fry, plus fry from hatchery-raised brood stock salmon, for a total of 140,000, will be reared at Kensington. The 14 adult salmon, called kelts after spawning, are also being held at Kensington. A program of nutritional research is being developed to provide an optimum diet to enhance further egg production by these fish.

When the changeover at Kensington is complete, the station will have an annual capacity of 150,000 two-year-old smolts (juvenile salmon ready to migrate to the sea). ■



# We get letters . . .

Stanley J. Pac, Commissioner  
Department of Environmental Protection

Dear Commissioner Pac,

I am writing to call to your attention that articles appearing from time to time in the Citizens' Bulletin erroneously state or imply that all housing development is a cost or tax burden to the local community. Reinforcing this widely held misconception favors the highest priced homes. It contributes significantly to the difficulty our members experience in seeking approval of plans to build homes that more people can afford. It contradicts state policy in that the legislation creating the Department of Housing directs that Department to enlist the private sector in meeting state housing needs.

The references to the tax cost of housing production tend to appear in articles advocating the preservation of open space. I refer, for example, to an article a few months ago by the state forester. In it he stated that removing land from the tax rolls for open space was less expensive than allowing the land to be used for housing development.

More recently, Jack Gunther, in an article on land trusts in the September 1980 Citizens' Bulletin, supported his advocacy of gifts of land to land trusts by stating that the same "...are a most economical means... (to) minimize the cost and strain of rapid town expansion." A comparison of real tax rates in towns experiencing growth with those that are not will fail to support Mr. Gunther's implication that growth means higher costs. Indeed, the reverse often can be shown. Moreover, the "strain" of growth is subjective, except that all studies of

growth control show it to be a strain on home buyers because of the increased cost of homes.

In another article, Mr. Gunther describes the gift of a conservation easement that prevented the construction of 12 additional condominium units. He states that this eliminated the potential drain on town services. Contrary to this assertion, nearly all condominium developments in this state actually reduce the strain on town services by contributing a net tax increase to the towns. That is, they pay far more in taxes than they demand in tax supported services.

The reason for this is simple. Whereas the major portion of most town budgets is to provide education, condominium residents add no children, or very few, to the local school system. In addition, many require less of other town services than do other residents because they provide and maintain their own road maintenance, snow plowing and recreation facilities. A recent Avon town planner's case study showed a multi-family housing development producing revenues exceeding costs by six times!

Because of the demographic changes to small households and fewer children that took effect during the 1970s even larger single-family homes do not necessarily add tax costs. In one single-family home subdivision surveyed by one of our builders, for example, just six of 50 homes were purchased by people with children. In another of 31 homes, the average was one school child per home. This is hardly the "horde of kids" frequently cited by those who oppose housing development.

Almost all the increase in households, the unit of demand for

homes, is in those of one or two persons only. These households already comprise more than half of our households. By 1990 MIT-Harvard researchers predict that two-thirds of all households will be only one or two persons. Increasing housing supply to meet these housing needs will increase local tax revenues vis-a-vis local tax costs, not the reverse.

On behalf of the members of our Association, I respectfully request that you urge the DEP staff, particularly the editors of the Citizens' Bulletin, to refrain from promoting this erroneous misconception so injurious to our industry and the need of housing consumers throughout Connecticut.

Sincerely,

Richard W. Davis  
Executive Director  
Home Builders Association  
of Connecticut

*We try to provide "Citizens' Bulletin" readers with information about the capacities of the natural resource systems on/in which they might consider building (or buying) homes. We do not intend to discourage home building, but, by the very nature of the Department of Environmental Protection's business, we are committed to conserving and preserving a portion of the State's open spaces and the biological communities they support as well as to maintaining the overall quality of the environment.*

*The Department tries to foster sound development and attempts to make the public aware of the options available as well as of the trade-offs that may be involved.*

Editor



# The big ones . . .

## Record game fish of Connecticut

<u>Common Name</u>	<u>Scientific Name</u>	<u>Weight</u>	<u>Where taken</u>	<u>Angler</u>
Brook trout	Salvelinum fontinalis	4 lbs. 7 oz.	Salmon River, Haddam, 1980	Conrad Schliecher, New Britain
Brown bullhead	Ictalurus nebulosus	2 lbs. 14 oz.	Pritchard Pond, Waterbury, 1968	Albert E. Podzunes, Jr., Wolcott
Brown trout	Salmo trutta	16 lbs. 4 oz.	Mashapaug Lake, 1968	Albert Jarish, East Hartford
Rainbow trout	Salmo gairdnerii	9 lbs. 8 oz.	Crystal Lake, Ellington, 1979	Arvid E. Rubacha, Enfield
Lake trout	Salvelinus namaycush	29 lbs. 13 oz.	Wononscopomuc Lake, 1918	Dr. Thompson, New York
Tiger trout		4 lbs. 15 oz.	Farmington River, Pine Meadow, 1972	Stephen Chirico, Pine Meadow
Smallmouth bass	Micropterus dolomieu	7 lbs. 10 oz.	Mashapaug Lake, 1954	Frank Domurat, Newington
Largemouth bass	Micropterus salmoides	12 lbs. 14 oz.	Mashapaug Lake, 1961	Frank Domurat, Newington
Walleyed pike	Stizostedion v. vitreum	14 lbs. 8 oz.	Candlewood Lake, 1941	George Britto, Bethel
Chain pickerel	Esox niger	7 lbs. 14 oz.	Wauregan Reservoir, 1969	Charles Loman, Ledyard
Northern pike	Esox lucius	29 lbs.	Lake Lillinonah, 1980	Joseph Nett, Prospect
Shad*	Alosa sapidissima	9 lbs. 2 oz.	Connecticut River, Enfield Dam, 1973	Edward P. Nelson, Prospect
White Catfish	Ictalurus catus	9 lbs. 13 oz.	Shaker Pines Lake, Enfield, 1973	Diane Wadsworth, Enfield
Calico bass	Pomoxis nigromaculatus	4 lbs.	Pataganset Lake, 1974	James M. Boos, East Lyme
White perch	Roccus americanus	2 lbs. 8 oz.	Connecticut River, 1961	Barney Walden, Windsor
Yellow perch	Perca flavescens	2 lbs. 13 oz.	Black Pond, Woodstock 1973	Miller B. Bassett, Coventry
Bluegill		2 lbs.	Waskewicz Pond, Seymour, 1974	Scott Rich, Woodbridge
Sea trout (brown trout)		9 lbs. 10 oz.	Golden Spur, Waterford, 1968	Albert J. DeLoge, Taftville
Common sunfish		14 1/4 oz.	Private Pond, Bloomfield, 1973	Stuart Ferguson, East Hartford
Rock bass	Ambloplites rupestris	1 lb. 1 oz.	Highland Lake, Winchester, 1973	Albert E. Beck, Plantsville

\*Accepted North American Record





71 capitol avenue hartford, conn. 06115

# CAM NEWS

## State twenty-first program to get federal approval

Connecticut's coastal management program was approved by the federal Department of Commerce on September 29, 1980. The action by the agency's Office of Coastal Zone Management (OCZM) was the culmination of a five-year planning effort on the part of the State's Department of Environmental Protection and a two-year legislative effort on the part of the General Assembly.

The joint work effort included among other tasks: four years of planning studies, under the guidance of an advisory board; over 400 meetings with public officials, coastal residents, environmental, and economic groups; enactment of the Coastal Management Act (signed into law by Governor Ella Grasso on June 29, 1979); publication of a "Final Environmental Impact Statement and Plan of Action"; the designation of coastal contacts for each of the 42 municipalities in the coastal zone; and establishment of a monitoring network.

Michael Glazer, administrator for the federal Office of Coastal Zone Management, confirmed the approval. He said, "Connecticut's program represents an innovative approach toward meeting the complex coastal needs of the state." As a result of approval, the State was awarded a 12-month grant of \$1.3 million, beginning October 1, 1980. More than half of the funds will be available to towns for coastal site plan reviews and development of local coastal programs. Remaining funds will be used to support the State portion of the program with

funds specifically allocated for technical assistance, program monitoring, a study of the environmental problems of coastal embayments, and a floodplain acquisition priority study.

The CAM Program is based on the state's Coastal Management Act. The Act established a new set of policies, standards, and criteria for the use and management of the State's coastal resources. The program is administered at the local level through incorporation of the policies and standards into municipal coastal site plan reviews. A new set of tidal

wetlands regulations was adopted during 1980 and included as part of the program. The coastal boundary, also established by statute, extends 1,000 feet inland from mean high water, or 1,000 feet from tidal wetlands, whichever measurement is farthest inland.

Connecticut joins 24 other states and territories which have federally approved and funded programs. Thirty-five coastal states and territories were eligible. In 1980, the addition of Connecticut, along with Louisiana, Mississippi, Pennsylvania, American Samoa, Northern Marianas, and the second portion of New Jersey, to the ranks of the federally approved brings the national shoreline covered under coastal management programs to 78 percent. Total shoreline miles included in the various programs reached 74,620, out of a possible 95,429. The population of coastal towns and countries included in the national program is 53,768,099. ■

### States with CAM approval

### Approved

### Coastal miles

Washington	1976	3,026
Oregon	1977	1,410
California	1978	3,427
Massachusetts	1978	1,519
Wisconsin	1978	820
Rhode Island	1978	384
Michigan	1978	3,224
North Carolina	1978	3,375
Puerto Rico	1978	700
Hawaii	1978	1,052
Maine	1978	3,478
Maryland	1978	3,190
New Jersey	1978	1,792
(Bay/Ocean Segment)		
Virgin Islands	1979	175
Alaska	1979	33,904
Guam	1979	110
Delaware	1979	381
Alabama	1979	607
South Carolina	1979	2,876
Louisiana	1980	7,721
Mississippi	1980	359
CONNECTICUT	1980	618
Pennsylvania	1980	140
New Jersey	1980	***
(remaining segment)		
Northern Marianas	1980	206
American Samoa	1980	126





By Martina Delaney,  
Citizens' Participation Coordinator

## For Your Information

### WASTE ALERT! spreading word

Six national organizations, with a combined membership of four and one-half million, have joined in a nationwide public information campaign called WASTE ALERT! Through conferences and publications, the new coalition has been spreading the word on solid and hazardous waste management. The goal: to get more citizens involved in waste management decisions at the state and local levels.

The national WASTE ALERT! steering committee and the Environmental Protection Agency, in an effort to help citizens promote sound solid and hazardous waste management practices at the state level, have begun to put more emphasis -- and money -- toward activities to be held after WASTE ALERT! conferences. The steering committee, which consists of representatives of the American Public Health Association, Environmental Action Federation, Izaak Walton League of America, League of Women Voters Education Fund, and National Wildlife Federation Technical Information Project, has allocated funds to States which have participated in regional conferences.

Region I, of which Connecticut is a part, is hosting a WASTE ALERT! conference this summer. Any state organization which coordinates public participation in the conference becomes eligible for "seed" money. This funding can be used to cover costs incurred in

maintaining contact with WASTE ALERT! conference participants, costs for spreading the word about waste management issues and involving other citizens and organizations, planning activities, and investigating public and private funding sources for these activities. The organization can use the funds for such expenses as copying, telephone, mailings, and holding meetings.

If you would like more information about the summer WASTE ALERT! conference or the grants, contact Marilyn Millstone, Izaak Walton League of America, 1800 W. Kent St., Arlington, VA 77709 (703-528-1818). ■

### Scenic road preservation

An ad hoc preservation group, "Residents for Rural Roads," is promoting a scenic road statute in this session of the Legislature so that Connecticut can join New Hampshire, Vermont, Massachusetts, and Wisconsin in promoting scenic roads -- "roads which are an important part of Connecticut's New England charm." The statute proposed for Connecticut:

1. Gives towns the option of adopting local ordinances to designate certain roads as scenic roads which would then be protected through local regulation of future alterations and improvements;
2. Permits protection of the remaining dirt roads in the State as well as roads bounded by old stone walls, mature

trees, brooks, ponds and scenic views;

3. Does not allow the designation of a scenic road unless:

A. The road is free of intensive commercial development, and

B. A majority of abutting landowners approve the designation;

4. Requires towns to continue to keep scenic roads in good repair and passable condition;

5. Does not impose new costs or burdens on towns.

Mary-Michelle Hirschhoff, a Bethany resident and spokeswoman for Residents for Rural Roads, said existing state law allows as few as six residents of a road to go to Superior Court seeking an order for road improvements. The members feel the bill that has been filed would balance this statute, allowing communities to adopt scenic road ordinances.

The entire length of a road does not have to be designated, and the designation can be rescinded by reversing the process under which a road is picked as a scenic byway. The measure would only apply to local roads and not to state highways. For more information, contact Susan C. Welch, 375 Sperry Road, Bethany, CT 06425. ■

### Renewable Resource Center

The Connecticut Audubon Society has added a "Renewable Energy Resource Center" to its educational program. The Center's staff will make available representatives to speak on passive solar energy, to lead field trips to solar installations, to conduct day-long seminars on passive solar energy, to provide in-service workshops for teachers wanting to explore solar energy in the classroom, and to conduct hands-on workshops to provide the public with an opportunity to assist in the construction of passive solar systems. For information, contact Gary Krasnow, Director of the Renewable Energy Resource Center, at 259-6305. ■



The Connecticut 208 Program has been involved in various aspects of water quality management planning since 1976. These have generally entailed the development of strategies to control various types of non-point source pollution such as erosion and sedimentation, landfill leachate, industrial and municipal sludge disposal, and storm water runoff. In addition, more complex programs such as aquifer protection and sewer avoidance have developed as logical offshoots of earlier activities.

The 208 Program is conducting an entirely different type of planning effort in the Greater New Haven area, an effort which touches on more than simply non-point source pollution abatement. The Regional Planning Agency of South Central Connecticut, utilizing 208 funding, is working to preserve land along the Quinnipiac River.

Connecticut has eight major drainage basins. The Quinnipiac River drainage basin or watershed is a subset of the major drainage basin known as the Central Connecticut coastal basin which drains into Long Island Sound. The Quinnipiac River drainage basin proper includes portions of 14 municipalities and covers approximately 169 square miles, about 3.5 percent of the land area of the State. Eight of these municipalities border the main stem of the Quinnipiac River (Plainville, Southington, Cheshire, Meriden, Wallingford, Hamden, North Haven, and New Haven). There are approximately 20 tributaries carrying runoff from the 14 towns to the Quinnipiac and ultimately to New Haven Harbor. Several of these streams are navigable for some of their lengths. The Quinnipiac, approximately 40 miles long, is the largest river contained within South Central Connecticut and the most diverse from a cultural, historical, and ecological point of view.

The headwaters of the Quinnipiac are in Trout Brook, Plainville, and Dead Wood Swamp,

# 208 water quality management

## 208 working on "greenbelt" for Quinnipiac River

New Britain. The first impoundment, Atwater Pond, is located in the Plantsville section of Southington; the second impoundment is Hanover Pond, Meriden (83 acres); the third, an unnamed dam at the site of an old mill in the Yalesville section of Wallingford; and the fourth is (more correctly - was) Community Lake, Wallingford. The dam below Community Lake broke in January of 1979, during a 40-year storm event. The restoration of the dam and the return of the water level in the lake to its previous condition will not take place in the near future due to funding constraints. The impoundment and associated wetlands were 150 acres in extent. The fifth impoundment is a spillway just below the broken dam.

From its source to the Southington sewage treatment plant, the Quinnipiac River is Class B (swimmable and fishable and suitable for cold water fisheries); from the plant to tidewater, Class C (clean enough for aquatic life, but too dirty for swimming and fishing); from tidewater (near Sackett Point Road, North Haven) to its mouth, Class SD (salt water of unacceptable quality). All the tributaries to the Quinnipiac are classified as suitable for swimming and fishing, or better, with the exception of lower Harbor Brook, Clark Brook, and Sodom Brook in Meriden which are Class C. However, it should be kept in mind that these classifications are based upon criteria for organic pollution and may not reflect water quality conditions due to inorganics or post-storm situations.

The Quinnipiac "river preservation" project has as its goal the establishment of a "green belt," or buffer zone along the river corridor. Green belts serve an important function in non-point source pollution control by acting both as filters which trap sediment carried by storm water and as stream bank stabilizers which limit erosion. The green belt also helps retain the flood buffering capacity of the floodplain; this is certainly a more aesthetic approach to flood protection than the more typical construction of dikes and levees or use of rip rapping.

While water quality improvement is the primary objective of this project, another major consideration is the increased recreational opportunities which will be afforded the public by the establishment of the green belt. After all, it doesn't make much sense to spend tax dollars to clean up streams that the public can't get to. In the case of the Quinnipiac, literally millions of dollars are being spent to upgrade the sewage treatment plants in Meriden and Wallingford. Once these plant modifications are completed (in 1985) a substantial improvement in water quality will be realized.

One factor which makes the success of a corridor program likely is the significant portion of the land along the Quinnipiac already in public ownership. The city of Meriden owns 23 acres along the Quinnipiac forming a park corridor in the Quinnipiac Gorge. Over half of the property abutting Hanover Pond is owned by the City, Dosson Beach, Habershon Field, and an athletic field. The City of Meriden owns a large piece of property straddling the Wallingford border, the site of the municipal well field, airport, landfill, and sewage treatment plant. The Town of Wallingford owns a 26-acre recreational field bordering the west bank of the river off Oak Street in Yalesville, 126 acres surrounding Community Lake, and



a large piece of land east of the Quinnipiac State Park, the site of the municipal landfill, filtration plant, and sewage treatment plant. The North Haven Conservation Commission has been very successful over the years in encouraging industrial and commercial enterprises to donate river buffer lands to the town. Part

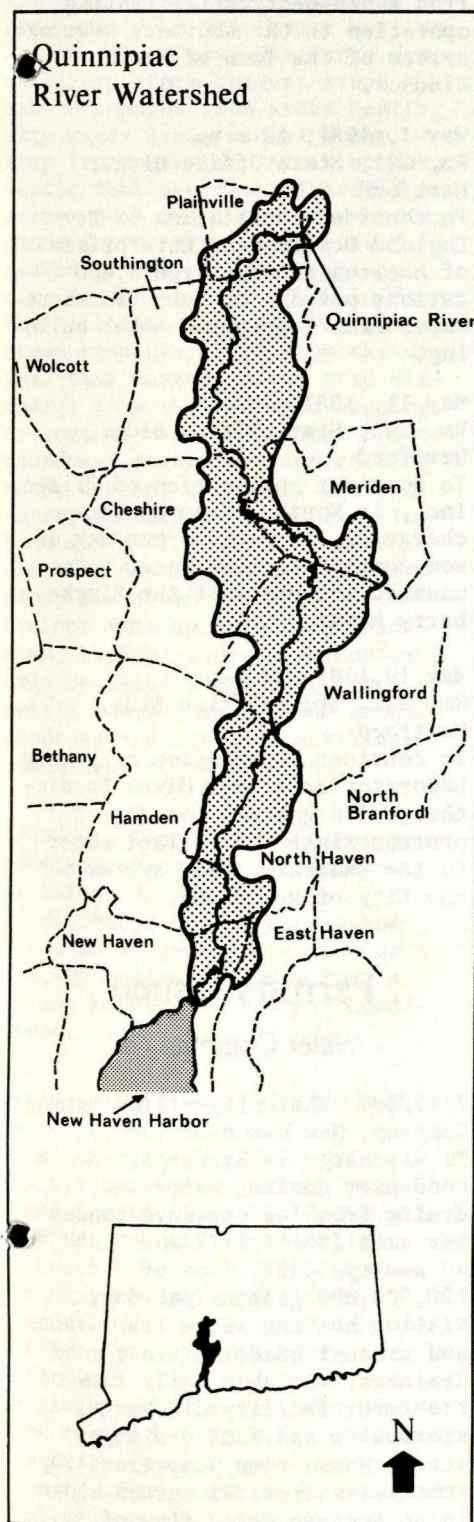
of the 1400-acre Sleeping Giant State Park in Hamden falls within the drainage area. The State owns 573 acres of tidal marsh in Hamden and North Haven (a small portion in New Haven) designated for conservation and preservation. The City of New Haven maintains three recreational parks adjacent to the river, Quinnipiac Park, Dover Beach, and Fairmount Park.

only extensive estuarine marshes in the Connecticut triassic lowland. Muskrats are prolific here due to the extensive areas of cattails, and trappers have taken as many as 4,000 to 5,000 muskrats in a year.

In the spring of 1979 the Quinnipiac River Watershed Association was founded. Its members are from the eight towns along the main stem of the river and are committed to both improving the water quality and increasing public access and recreational opportunities. The Association sponsored a very successful canoe race last spring which drew the attention of the public to the value of the Quinnipiac as a valuable recreational entity. The group is working hand-in-glove with the regional planning agency on the study.

In the final analysis, the Connecticut 208 Program hopes to achieve improved water quality, better recreational access, and increased public awareness of the Quinnipiac River and its value as a natural resource. ■

By Joseph M. Rinaldi,  
208 Public Participation Coordinator,  
P.O. Box 1088, Middletown, Ct. 06457  
(203) 347-3700



In 1976, \$815,000 of federal monies were granted to the State for the purchase of the Banton Street area (the first non-structural flood control project in Connecticut). This property became the southernmost addition to the Quinnipiac River State Park, 313 acres of landlocked property situated between the Wilbur Cross Parkway and the river in North Haven. (Access to this park is needed.) Since 1964, \$1,390,743 in federal funds has been spent on acquisition and development projects under the Land and Water Conservation Program in the municipalities of Cheshire, Meriden, Wallingford, North Haven, and New Haven. The municipalities of Meriden, North Haven, and Wallingford have several applications pending for acquisition of land or development or rehabilitation of recreational facilities in the drainage basin. There is great potential here for isolated publicly owned properties to be connected to form riverside recreation areas.

The entire river is used for canoeing and fishing. In Plainville and Southington, use of the river includes swimming, although the water quality of the river drops, excluding swimming, below this point. In the past, recreational boating activity centered on Hanover Pond and Community Lake and the lower portion of the river. Choate-Rosemary Hall maintained a rowing course on Community Lake. In New Haven, there are two marinas and one yacht club on the river. The Quinnipiac River State Park affords hiking on the Blue Trail along the west bank. Hunting and trapping occur at Community Lake and in the State owned Quinnipiac Marshes. These marshes are the

## Audubon offers environmental studies scholarships

The National Audubon Society Expedition Institute makes scholarship funds available to graduate, college, and high school students who are interested in outdoor education or environmental studies. Financial aid, in varying amounts, will be awarded by July 31, 1981, and may be used for any Audubon educational program or other school, college, or conservation education programs.

Application forms can be obtained by writing to the National Audubon Society, Expedition Institute, 950 Third Ave., New York, NY 10022.



## Public Hearings

A Public Hearing will be held on April 22, 1981, at 10:00 a.m. in room 558, State Office Building, Hartford, to consider the Connecticut Department of Environmental Protection's application for primacy to administer the Underground Injection Control Program (UIC).

The purpose of the UIC Program is to ensure the protection of underground sources of drinking water through the regulation of all discharges to groundwaters from injection wells. An injection well is defined as a structure which is deeper than it is wide. Injection into the well may take place by pumping the fluid into the well under pressure or by allowing the fluid to enter the well by gravity flow. The UIC Program is closely allied with Connecticut's expanded role in ground water protection as developed in the State's ground water standards.

Injection wells are categorized into five separate groups:

Class I: Industrial and municipal disposal wells; nuclear storage and disposal wells;

Class II: Injection wells associated with oil and gas production and hydrocarbon storage;

Class III: Special process wells in conjunction with solution mining of minerals and the recovery of geothermal energy;

Class IV: Wells which are used by generators of hazardous wastes or hazardous waste management facilities; and

Class V: Wells which are used for septic systems and discharges from heat pump systems. It is assumed that only those non-household septic systems that are deeper than wide are included.

Connecticut has no known Class I, II, or III wells. This state's UIC Program will address Class IV and Class V injection wells.

Within the Department, the Water Compliance Unit has sufficient authority under existing State Statutes to administer this program. All new discharges to the ground waters of the State are required to obtain a permit under Section 25-54i prior to initiation of the discharge. In addition, the Department has been issuing permits to existing ground water discharges that are satisfactory and administrative orders for elimination and/or cleanup to those that are causing pollution as quickly as resources permit. A public comment period will be held until May 6, 1981. Please address comments to: Wes Winterbottom, Water Compliance Unit, DEP, 165 Capitol Avenue, Hartford, CT 06115.

April 28, 1981; 10 a.m.  
Rm. 1, 122 Washington St.,  
Hartford

To consider application of Automatic Business Products of Wilimantic to discharge 12.4 gallons per day of printing plate washout to an on-site subsurface disposal system in the Town of Windham.

April 28, 1981; 10 a.m.  
Rm. 221, State Office Bldg.,  
Hartford

To consider application of Schott Electronics, Inc., of Ansonia to discharge 6,000 gallons per day of treated effluent from metal finishing the the Naugatuck River and 1,000 gallons per day to the Ansonia Municipal Sewerage system.

April 29, 1981; 1:30 p.m.  
Rm. 221, State Office Bldg.,  
Hartford

To consider application of Branson Cleaning Equipment Co. of Shelton to discharge 1,000 gallons per day of cooling and detergent contaminated test water to the Town of Shelton sanitary sewer system.

April 30, 1981; 1:30 p.m.  
Rm. 221, State Office Bldg.,  
Hartford

To consider application of Koton, Allen & Associates, Inc., to discharge 17,400 gallons of sanitary sewage from Nutmeg Towers to the City of Danbury Sewerage System.

April 30, 1981; 10 a.m.  
Rm. 221, State Office Bldg.,  
Hartford

To consider application of Electro-Methods, Inc., to discharge 61 gallons per day of rinsewater from a non-destructive testing operation to the sanitary sewerage system of the Town of South Windsor.

May 1, 1981; 10 a.m.  
Rm. 221, State Office Bldg.,  
Hartford

To consider application of New England Development Enterprises of Shelton to discharge 9,600 gallons per day of domestic wastewater from a proposed hotel building.

May 11, 1981; 10 a.m.  
Rm. 221, State Office Bldg.,  
Hartford

To consider application of Pfizer, Inc., in North Canaan to discharge 28,800 gallons per day of non-contact cooling water to an unnamed tributary of the Blackberry River.

May 19, 1981; 10 a.m.  
Rm. 221, State Office Bldg.,  
Hartford

To consider application of Lerner Laboratories of New Haven to discharge 250 gallons per day of process rinse and coolant water to the sanitary sewer system in the City of New Haven.

## Permits Issued Water Compliance

7/17/80: The United Illuminating Company, New Haven  
To discharge to Bridgeport Reach condenser cooling water and drains from low pressure condenser area (Units #1-7 and 9) in an average daily flow of 120,000,000 gallons per day; station heating steam trap drains and exhaust header drains; roof drainage; variable daily flow of treatment facility discharge, stormwater and roof drainage; screen house sump pump-traveling screenwashwater: #3 screen house in an average daily flow of



17,280 gallons per day; condenser cooling water in an average daily flow of 43,000,000 gallons per day; and traveling screen backwash water in an average daily flow of 26,400 gallons per day. Conditions.

7/17/80: The United Illuminating Company, New Haven  
To discharge to the Mill River steam trap discharge from building heating system; steam trap discharge from foam house heating system; steam trap discharge from auxiliary steam header; steam trap discharge from steam heating city water line; manual steam trap from auxiliary steam header; septic tank overflow; Traveling screen wash and tunnel dewatering; floor drains from foam house (will discharge only under emergency fire conditions); yard drain from fuel oil tank dike (locked drain); steam trap discharge from the day fuel tank heater; steam trap discharge from storage shed heating system; make-up evaporator boiler blowdown; condensate and cooling water drains; condenser cooling water; miscellaneous boiler, turbine and roof drains; treatment facility discharge; sewage overflow; miscellaneous process drains; make-up evaporator blowdown; high pressure superheater drip by-passes; low pressure unit's cooling water; and manual condensate drain from auxiliary steam heater. Conditions.

7/23/80: Conn. Dept. of Environmental Protection, Fisheries Division, Hartford  
To discharge to the Farmington River an average daily flow of 576,000 gallons per day from a salmon holding facility. Conditions.

9/4/80: Willimantic Water Department, Willimantic  
To discharge to the Town of Mansfield sewerage system an average daily flow of 12,000 gallons per day of settled filter backwash sludge and settling basin alum sludge. Conditions.

9/4/80: Mr. Michael Mehigan, Oxford  
To discharge to an unnamed tributary to the Little River an average daily flow of 4,800 gallons per day of non-contact heating/cooling waters. Conditions.

9/4/80: The Kendall Company, Windham  
To discharge to an unnamed tributary to the Natchaug River an average daily flow of 46,000 gallons per day of cooling water at a maximum temperature of 85° F. Conditions.

9/25/80: Edmunds Manufacturing Company, Farmington  
To discharge to the town of Farmington sewerage system an average daily flow of 1,290 gallons per day of wastewaters. Conditions.

9/25/80: Edmunds Manufacturing Company, Farmington  
To discharge to Scott Swamp Brook an average daily flow of 4,687 gallons per day of wastewaters. Conditions.

9/25/80: Dell Manufacturing Company, Inc., Farmington  
To discharge to Scott Swamp Brook an average daily flow of 600 gallons per day of wastewaters. Conditions.

9/25/80: The Waverly Division, Robinson Wagner Company, Inc., Guilford  
To discharge to East Creek an average daily flow of 13,000 gallons per day of wastewaters. Conditions.

9/25/80: Clairol Inc., Town of Stamford  
To discharge to a storm sewer tributary to Long Island Sound an average daily flow of 250,000 gallons per day of wastewaters. Conditions.

9/25/80: The Shoreline Times Printing Company, Guilford  
To discharge to drainage swale to Long Island Sound an average daily flow of 100 gallons per day of wastewaters. Conditions.

9/25/80: Willimantic Water Department, Town of Mansfield  
To discharge to the Natchaug River an average daily flow of 15,000 gallons per day of wastewaters. Conditions.

9/25/80: Mr. William B. Kement, Suffield  
To discharge landfill leachate to the groundwaters of the Mountain Brook watershed. Conditions.

9/25/80: Sparkle Car Wash Inc., Tolland

To discharge to the groundwaters of the Town of Tolland an average daily flow of 1,650 gallons per day of wastewaters. Conditions.

9/25/80: Polymetrics, Inc., South Windsor  
To discharge to the Town of South Windsor sewerage system an average daily flow of 15,000 gallons per day of regeneration wastewaters from water demineralizing operations. Conditions.

9/25/80: Macristy Industries, Inc., New Britain  
To discharge to the City of New Britain sewerage system an average daily flow of 72,000 gallons per day of metal finishing wastewaters and an average daily flow of 600 gallons per day of cleaning solutions wastewaters. Conditions.

9/25/80: United Parcel Service, Bozrah  
To discharge to the Town of Bozrah groundwaters an average daily flow of 1,400 gallons per day of vehicle wash water. Conditions.

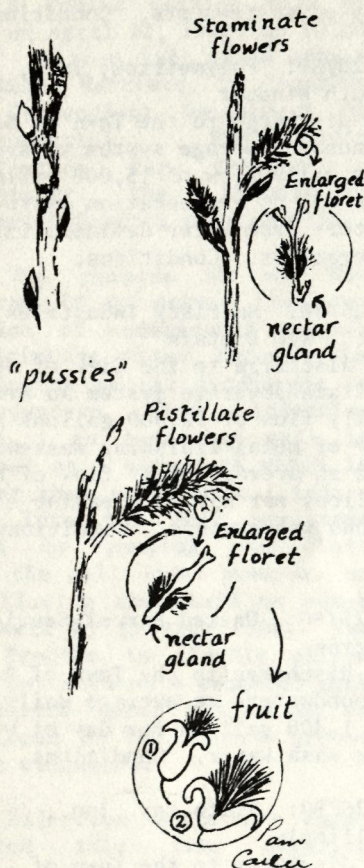
9/25/80: Frito-Lay, Inc., Killingly  
To discharge to the Town of Killingly sewage treatment plant, prior to completion of modifications of the plant, an average daily flow of 640,000 gallons per day of food processing wastewaters, and upon completion of modifications, an average daily flow of 820,000 gallons per day of food processing wastewaters and an average daily flow of 9,500 gallons per day of truck washing wastewaters. Conditions.

11/4/80: Perry C. Marshall, Cheshire  
To discharge to the groundwaters in the Watershed of the Mill River an average daily flow of 4,000 gallons per day of non-contact heating/cooling water. Conditions.

11/6/80: Town of Manchester  
To discharge to the Hop Brook, prior to the installation of advanced wastewater treatment facilities, an average daily flow of 6,750,000 gallons per day of wastewaters, and after installation, an average daily flow of 11,700,000 gallons per day of wastewaters. Conditions.



Pussy willow  
*Salix discolor*



## Trailside Botanizing

by G. Winston Carter

Spring evokes a feeling of rejoicing in many people. In the natural world what appears to be lifeless suddenly seems to be reborn. Those who anxiously watch for subtle signs of spring in the plant world will find them in the well-known pussy willow. This species has larger pussies, or undeveloped flower clusters, than other species of willow. Even in February there may be plants that are beginning to show a bursting of their single scale buds and the emergence of the fur-like pussy, which appears before the leaves. Individual plants may continue to blossom until May.

*Salix discolor* usually appears as a shrub. Male and female flower clusters, which are called catkins or aments, are borne on separate plants. When mature the male, or staminate, flowers are laden with golden pollen, which is sought by bees to feed their

young. The cluster of female, or pistillate, flowers are softer, silkier, longer and less colorful.

Each staminate and pistillate catkin consists of many tiny flowers or florets. Attached to each floret is a nectar-producing, hairy scale or bract. This is what attracts the bees. Pollination is generally thought to be carried out chiefly by the wind, although the work of bees in this process may be underestimated. Each individual flower of the female catkin later becomes a fruit which is a tiny, two-valved, urn-shaped capsule that contains many minute hairy seeds, which are adapted for wind dispersal.

Pussy willows love a moist environment but will grow well in a dry site once they are established. They are used for indoor decoration and ornamental planting and are good soil stabilizers. The buds and shoots are food for animals such as rabbits and squirrels, while occasionally the bark and brachlets are eaten by deer.

## DEP Citizens' Bulletin

State of Connecticut  
Department of Environmental Protection  
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